



K. J. Somaiya College of Engineering, Mumbai - 77

Alternative Approaches to Data Storing and Processing

Batch : B4

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RDBMS IA2 (Implementation)

Implementation :

1) Creating database in MySQL :

CODE :

```
use IA2
db
show dbs
```

OUTPUT :

Raw Shell Output	
1	switched to db IA2
2	IA2
3	admin 0.000GB
4	config 0.000GB
5	local 0.000GB

2) Inserting data in MongoDB :

CODE :

```
db.students.insert(
[
  {
    "Student No.": "1",
    "FirstName": "Isha",
    "LastName": "Jain",
    "Age": "19"
  },
  {
    "Student No.": "2",
    "FirstName": "Dhanvi",
    "LastName": "Sheth",
    "Age": "20"
  },
  {
    "Student No.": "3",
    "FirstName": "Khushi",
```

Department of Computer Engineering



K. J. Somaiya College of Engineering, Mumbai - 77

```
"LastName": "Jivavat",
"Age": "19"
},
{
    "Student No.": "4",
    "FirstName": "Yash",
    "LastName": "Parekh",
    "Age": "20"
},
{
    "Student No.": "5",
    "FirstName": "Ishan",
    "LastName": "Jain",
    "Age": "14"
},
{
    "Student No.": "6",
    "FirstName": "Anchal",
    "LastName": "Jain",
    "Age": "20"
},
{
    "Student No.": "7",
    "FirstName": "Aryan",
    "LastName": "Jain",
    "Age": "20"
},
{
    "Student No.": "8",
    "FirstName": "Anish",
    "LastName": "Jain",
    "Age": "24"
},
{
    "Student No.": "9",
    "FirstName": "Meghna",
    "LastName": "Jain",
    "Age": "27"
},
{
    "Student No.": "10",
    "FirstName": "Heena",
    "LastName": "Jain",
    "Age": "32"
}
]
)
```



K. J. Somaiya College of Engineering, Mumbai - 77

OUTPUT :

```
Raw Shell Output
1 BulkWriteResult({
2   "writeErrors" : [ ],
3   "writeConcernErrors" : [ ],
4   "nInserted" : 10,
5   "nUpserted" : 0,
6   "nMatched" : 0,
7   "nModified" : 0,
8   "nRemoved" : 0,
9   "upserted" : [ ]
10 })
11
```

3) Displaying data in MongoDB :

CODE :

- a) db.students.find()
- b) db.students.findOne()
- c) db.students.count()
- d) db.students.find().limit(5)
- e) db.students.find().sort({Age:-1})
- f) db.students.find().sort({Age:1})

OUTPUT :

a)

```
Raw Shell Output Find Query (line 1) x
50 Documents 1 to 10
Pin Result Query Code Explain Query JSON View
1 {
2   "_id" : ObjectId("6088422aeaa6dff64978907f"),
3   "Student No." : "1",
4   "FirstName" : "Isha",
5   "LastName" : "Jain",
6   "Age" : "19"
7 }
8 {
9   "_id" : ObjectId("6088422aeaa6dff649789080"),
10  "Student No." : "2",
11  "FirstName" : "Dhanvi",
12  "LastName" : "Sheth",
13  "Age" : "20"
14 }
15 {
16  "_id" : ObjectId("6088422aeaa6dff649789081"),
17  "Student No." : "3",
18  "FirstName" : "Khushi",
19  "LastName" : "Jivavat",
20  "Age" : "19"
21 }
22 {
23  "_id" : ObjectId("6088422aeaa6dff649789082"),
24  "Student No." : "4",
25  "FirstName" : "Yash",
26  "LastName" : "Parekh",
27  "Age" : "20"
28 }
```



K. J. Somaiya College of Engineering, Mumbai - 77

```
29 {
30   "_id" : ObjectId("6088422aeaa6dff649789083"),
31   "Student No." : "5",
32   "FirstName" : "Ishan",
33   "LastName" : "Jain",
34   "Age" : "14"
35 }
36 {
37   "_id" : ObjectId("6088422aeaa6dff649789084"),
38   "Student No." : "6",
39   "FirstName" : "Anchal",
40   "LastName" : "Jain",
41   "Age" : "20"
42 }
43 {
44   "_id" : ObjectId("6088422aeaa6dff649789085"),
45   "Student No." : "7",
46   "FirstName" : "Aryan",
47   "LastName" : "Jain",
48   "Age" : "20"
49 }
50 {
51   "_id" : ObjectId("6088422aeaa6dff649789086"),
52   "Student No." : "8",
53   "FirstName" : "Anish",
54   "LastName" : "Jain",
55   "Age" : "24"
56 }
57 {
58   "_id" : ObjectId("6088422aeaa6dff649789087"),
59   "Student No." : "9",
60   "FirstName" : "Meghna",
61   "LastName" : "Jain",
62   "Age" : "27"
63 }
64 {
65   "_id" : ObjectId("6088422aeaa6dff649789088"),
66   "Student No." : "10",
67   "FirstName" : "Heena",
68   "LastName" : "Jain",
69   "Age" : "32"
70 }
```

b)

```
← ← → → | 50 | Documents 1 to 1 | 🔍
1 {
2   "_id" : ObjectId("6088422aeaa6dff64978907f"),
3   "Student No." : "1",
4   "FirstName" : "Isha",
5   "LastName" : "Jain",
6   "Age" : "19"
7 }
8
```

c)

```
Raw Shell Output
1 10
2
```




K. J. Somaiya College of Engineering, Mumbai - 77

```
29 {
30   "_id" : ObjectId("6088422aeaa6dff649789082"),
31   "Student No." : "4",
32   "FirstName" : "Yash",
33   "LastName" : "Parekh",
34   "Age" : "20"
35 }
36 {
37   "_id" : ObjectId("6088422aeaa6dff649789084"),
38   "Student No." : "6",
39   "FirstName" : "Anchal",
40   "LastName" : "Jain",
41   "Age" : "20"
42 }
43 {
44   "_id" : ObjectId("6088422aeaa6dff649789085"),
45   "Student No." : "7",
46   "FirstName" : "Aryan",
47   "LastName" : "Jain",
48   "Age" : "20"
49 }
50 {
51   "_id" : ObjectId("6088422aeaa6dff64978907f"),
52   "Student No." : "1",
53   "FirstName" : "Isha",
54   "LastName" : "Jain",
55   "Age" : "19"
56 }
```

f)

```
Raw Shell Output Find Query (line 1) ×
|← ← → →| 50 | Documents 1 to 10 | 🔒 📄 📄 📄 📄 📄 📄 📄 📄 📄
Pin Result Query Code Explain Query JSON View
1 {
2   "_id" : ObjectId("6088422aeaa6dff649789083"),
3   "Student No." : "5",
4   "FirstName" : "Ishan",
5   "LastName" : "Jain",
6   "Age" : "14"
7 }
8 {
9   "_id" : ObjectId("6088422aeaa6dff64978907f"),
10  "Student No." : "1",
11  "FirstName" : "Isha",
12  "LastName" : "Jain",
13  "Age" : "19"
14 }
15 {
16   "_id" : ObjectId("6088422aeaa6dff649789081"),
17   "Student No." : "3",
18   "FirstName" : "Khushi",
19   "LastName" : "Jivavat",
20   "Age" : "19"
21 }
22 {
23   "_id" : ObjectId("6088422aeaa6dff649789080"),
24   "Student No." : "2",
25   "FirstName" : "Dhanvi",
26   "LastName" : "Sheth",
27   "Age" : "20"
28 }
29 {
30   "_id" : ObjectId("6088422aeaa6dff649789082"),
31   "Student No." : "4",
32   "FirstName" : "Yash",
33   "LastName" : "Parekh",
34   "Age" : "20"
35 }
36 {
37   "_id" : ObjectId("6088422aeaa6dff649789084"),
38   "Student No." : "6",
39   "FirstName" : "Anchal",
40   "LastName" : "Jain",
41   "Age" : "20"
42 }
43 {
44   "_id" : ObjectId("6088422aeaa6dff649789085"),
45   "Student No." : "7",
46   "FirstName" : "Aryan",
47   "LastName" : "Jain",
48   "Age" : "20"
49 }
50 {
51   "_id" : ObjectId("6088422aeaa6dff649789086"),
52   "Student No." : "8",
53   "FirstName" : "Anish",
54   "LastName" : "Jain",
55   "Age" : "24"
56 }
```



K. J. Somaiya College of Engineering, Mumbai - 77

```
57 {
58   "_id" : ObjectId("6088422aeaa6dff649789087"),
59   "Student No." : "9",
60   "FirstName" : "Meghna",
61   "LastName" : "Jain",
62   "Age" : "27"
63 }
64 {
65   "_id" : ObjectId("6088422aeaa6dff649789088"),
66   "Student No." : "10",
67   "FirstName" : "Heena",
68   "LastName" : "Jain",
69   "Age" : "32"
70 }
71 }
```

4) Updating documents in MongoDB :

CODE :

```
db.students.save({"StudentNo.":"15","FirstName":"vani","LastName":"Jain","Age":"47"})
```

OUTPUT :

```
Raw Shell Output
1 WriteResult({
2   "nMatched" : 0,
3   "nUpserted" : 1,
4   "nModified" : 0,
5   "_id" : ObjectId("6086ee39acbc035489180ebd")
6 })
7
```

```
Raw Shell Output Find Query (line 1) x
50 Documents 1 to 22 | Pin Result Query Code Explain Query JSON View
123 "FirstName" : "Anish",
124 "LastName" : "Jain",
125 "Age" : "24"
126 }
127 {
128   "_id" : ObjectId("6088b43feaa6dff649789091"),
129   "Student No." : "9",
130   "FirstName" : "Meghna",
131   "LastName" : "Jain",
132   "Age" : "27"
133 }
134 {
135   "_id" : ObjectId("6088b43feaa6dff649789092"),
136   "Student No." : "10",
137   "FirstName" : "Heena",
138   "LastName" : "Jain",
139   "Age" : "32"
140 }
141 {
142   "_id" : ObjectId("6086ee39acbc035489180ebd"),
143   "LastName" : "srisimal"
144 }
145 {
146   "_id" : ObjectId("6088b5daeaa6dff649789093"),
147   "Student No." : "15",
148   "FirstName" : "vani",
149   "LastName" : "Jain",
150   "Age" : "47"
151 }
152 }
```



K. J. Somaiya College of Engineering, Mumbai - 77

5) Remove command in MongoDB :

Code:

```
db.students.remove({"_id" : ObjectId("6086ef2facbc035489180ec0")})
```

Output:

```
Raw Shell Output
1 WriteResult({ "nRemoved" : 1 })
2
```

6) Aggregate command in MongoDB :

Code:

```
db.students.aggregate([{$group :{ _id:"$Age", Myresult :{$sum:1}}]])
```

Output:

```
Raw Shell Output | Aggregate Query (line 1) x
← → | 50 | Documents 1 to 8 | Pin Result | Query Code | Explain Query | JSON View
1 {
2   "_id" : "27",
3   "Myresult" : 2.0
4 }
5 {
6   "_id" : "19",
7   "Myresult" : 3.0
8 }
9 {
10  "_id" : "32",
11  "Myresult" : 2.0
12 }
13 {
14  "_id" : "14",
15  "Myresult" : 2.0
16 }
17 {
18  "_id" : null,
19  "Myresult" : 1.0
20 }
21 {
22  "_id" : "47",
23  "Myresult" : 1.0
24 }
25 {
26  "_id" : "24",
27  "Myresult" : 2.0
28 }
29 {
30  "_id" : "20",
31  "Myresult" : 8.0
32 }
33 }
```




K. J. Somaiya College of Engineering, Mumbai - 77

7) Delete command in MongoDB :

Code:

- a) `db.students.deleteOne({FirstName : 'Anchal'})`;
- b) `db.students.deleteMany({"FirstName" : "Isha"})`;

Output:

```
Raw Shell Output | Shell Output (Documents) x
|< ← → →| | 50 | Documents 1 to 1 | | Pin Result | JSON View v
1 {
2   "acknowledged" : true,
3   "deletedCount" : 1.0
4 }
5

Raw Shell Output
1 { "acknowledged" : true, "deletedCount" : 1 }
2
```

8) Delete collection in MongoDB :

Code:

`db.students.drop()`;

Output:

```
Raw Shell Output
1 true
2
```

9) Delete database in MongoDB :

Code:

`db.dropDatabase()`;

Output:

```
Raw Shell Output | Shell Output (Documents) x
|< ← → →| | 50 | Documents 1 to 1 | | Pin Result | JSON View v
1 {
2   "dropped" : "IA2",
3   "ok" : 1.0
4 }
5

Raw Shell Output | Shell Output (Documents) x
1 { "dropped" : "IA2", "ok" : 1 }
2
```